National Quality Management Program (NQMP)

Special Studies Program

"Performance Improvement In the Military Health System"
First In a Series of Reports on Clinical Performance Indicators

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Presentation Objectives

- Describe the primary activities of the NQMP
- Present asthma controller medication patterns
- Present the rates of low-density lipoprotein cholesterol (LDL-C) and hemoglobin A1c (HbA1c) compliance and control
- Present the rates of diabetic eye examinations
- Identify areas for further investigation and study in asthma and diabetes care

Department Of Defense (DoD) NQMP Goals

- Participate in JCAHO ORYX® performance metrics process by submitting data to JCAHO (some hospitals self-report) as directed by the ORYX® Steering Committee (OSC)
- Perform special clinical studies as directed by the Scientific Advisory Panel (SAP)
- Perform external comparisons of Military Health System (MHS) outcomes with civilian benchmarks

Department Of Defense (DoD) NQMP Goals (Continued)

- Perform MHS internal comparisons
- Identify “best practices”
- Facilitate performance improvement

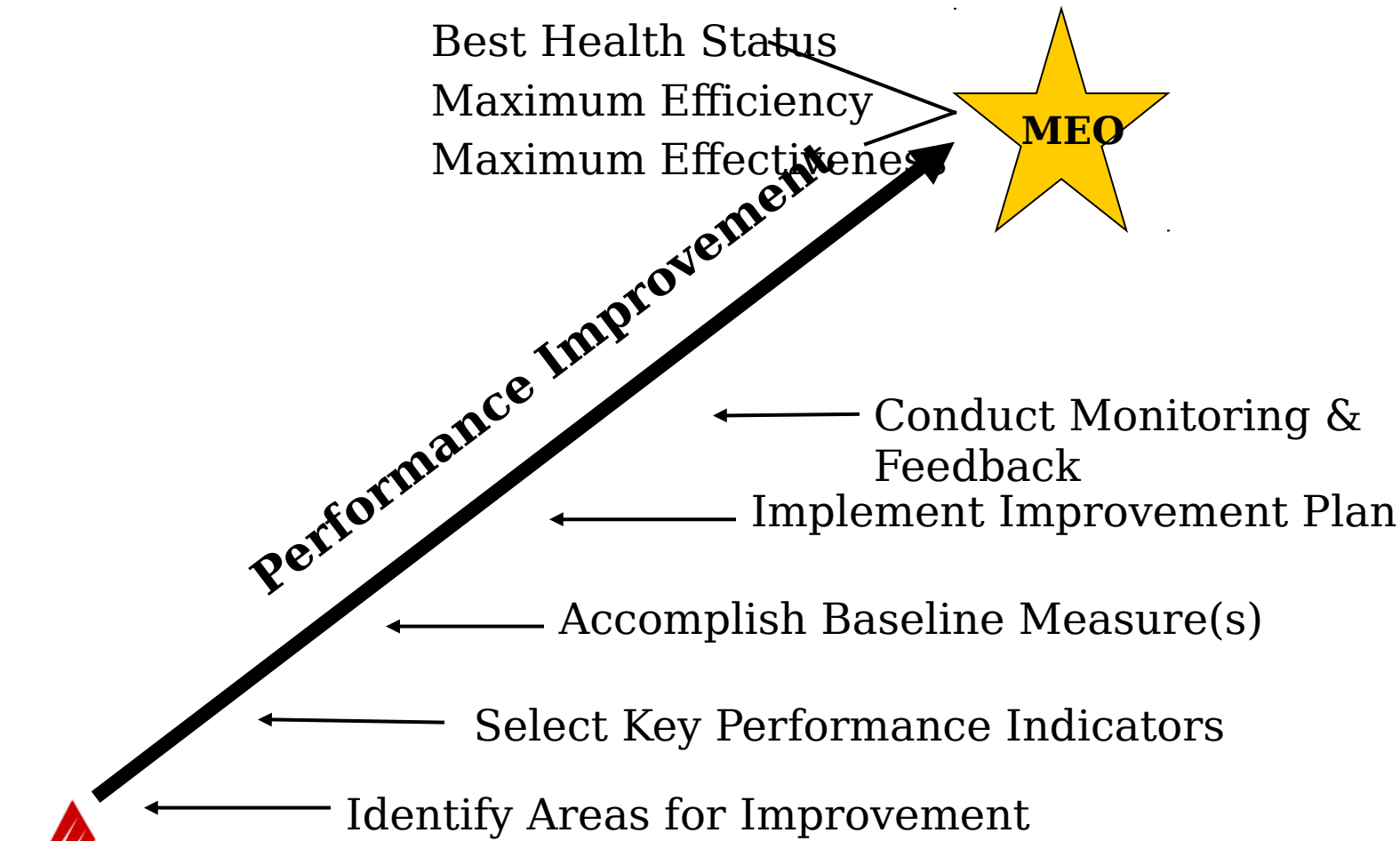
DoD NQMP Scientific Advisory Panel (SAP)

- The SAP is an oversight group that plans, develops, and directs special clinical studies in support of MHS performance improvement
- Current membership includes:
  - CAPT Mark Paris – Chairman
  - LTC Kathryn Dolter – Army rep
  - LCDR Mae Pouget – Navy rep
  - Lt Col Kelly Woodward – Air Force rep
  - Additional ad hoc members and subject matter experts as needed

Special Studies And Performance Measures

- Goals
  - Improve the health status of the population
  - Improve the effectiveness and efficiency of health care delivery
  - Support the the practice of evidence-based healthcare through use of clinical practice guidelines
    - Focus on a few key measures for preventive services delivery and disease management
    - Systematically collect and analyze data to provide actionable information to stakeholders at all levels

Performance Improvement to Most Effective Organization (MEO)



The Process

- Establish functional criteria and weights for importance
- Use criterion-based process to select areas for improvement (diseases/conditions of importance)
- Use criterion-based process to select performance indicators (metrics)

The Process (Continued)

- Establish solid study methodology with formal, approved methodology statement
- Accomplish baseline study and report findings
- Implement performance improvement process
- Conduct ongoing monitoring and feedback

Clinical Performance Improvement

Structure Process Outcome

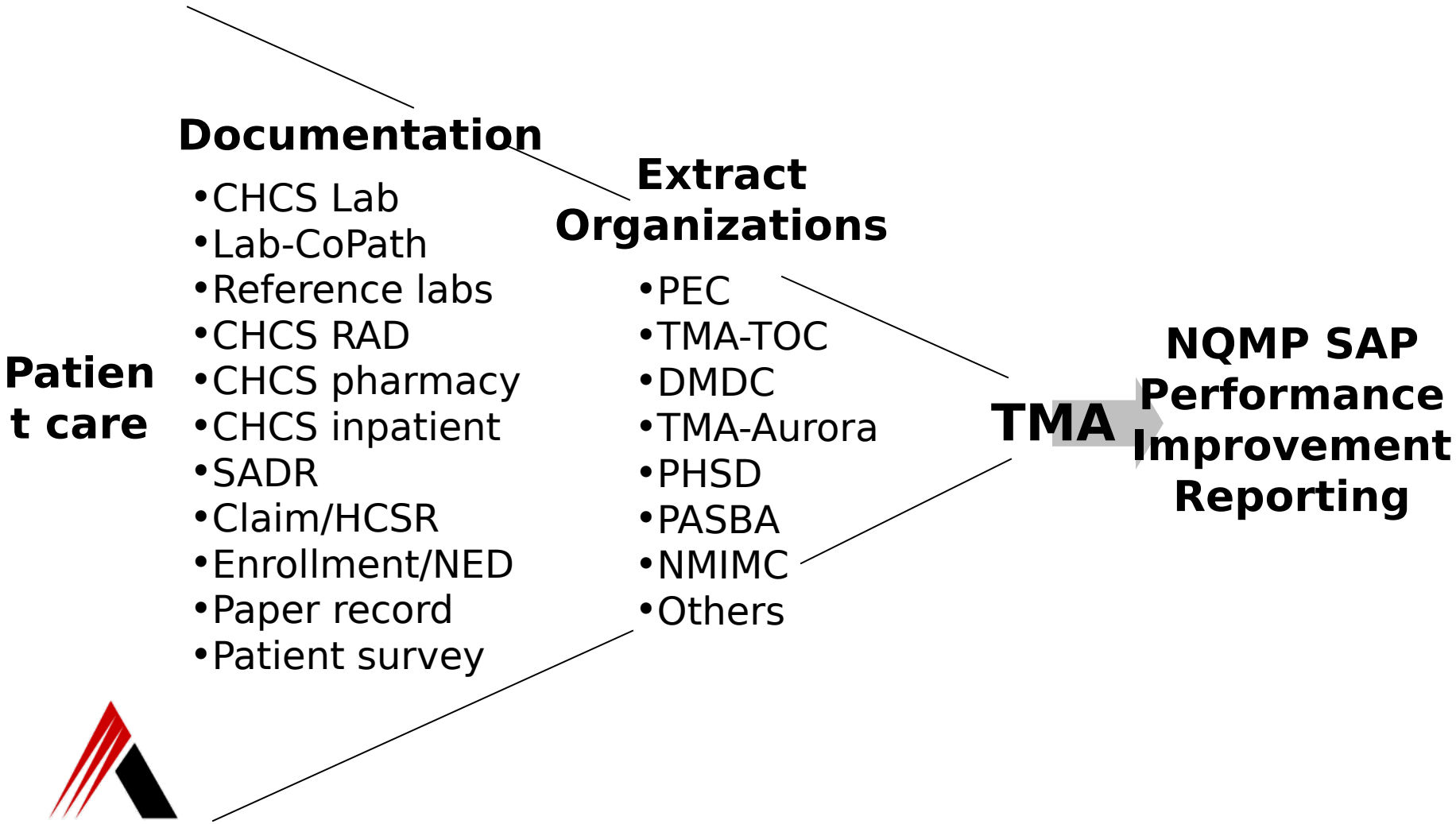
EXAMPLES INCLUDE:
Number of support staff to provider
Number of exam rooms per provider
Number of appointments per day
Staffing ratios per patients
Staff credentials

PROCESS
EXAMPLES INCLUDE:
Rate of HbA1C testing for diabetics
Rate of breast cancer screening
Rate of cervical cancer screening
Percent of asthmatics on maintenance drugs
Rate of childhood immunizations

OUTCOME
EXAMPLES INCLUDE:
Rate of diabetics with HbA1C <8.0
Lower stage of cancer at time of diagnosis
Increased cancer survival rates
Rate of smokers staying quit at one year
Rate of vaccine preventable disease

Source: *Explorations in Quality Assessment and Monitoring, Volume 1. The Definition of Quality and Approaches to its Assessment, Donabedian, Avedis.*

Collecting and Measuring the "Right Things" Is the Key



Special Studies And Performance Measures

- Measures conducted in FY01:
  - Diabetes care
  - Asthma care
  - Clinical preventive services
    - Breast and cervical cancer screening

Special Studies And Performance Measures (Continued)

- Measures planned for FY02:
  - Childhood immunizations, chlamydia screening
  - Follow-up diabetes care, asthma care, breast and cervical cancer screening
  - Management of dylipidemia, post-acute MI management
  - Depression, tobacco use cessation
  - Post-deployment health

Asthma and Diabetes Care
ACS Study Team

- Principle investigators:
  - Joseph Kelly, PhD - Asthma
  - James Leonard, MPH - Diabetes
- Associate investigators:
  - Stanley Chin, MA
  - James Fraser, MPH
  - Nawaz Hormozdyaran, MD
- Peer reviewers:
  - Samar Debakey, MD, MPH
  - Cathy Call, MSN

Special Recognition

- The DoD PharmacoEconomic Center (PEC)
- The USAF population health support division (PHSD)
  - Col Russell Eggert
  - Lt Col Christopher Phillips

Asthma Care in the MHS

Why Measure Asthma Care?

- World health organization (WHO) estimates 150 million people affected and 180,000 deaths annually worldwide
- In the U.S., an estimated 17.3 million people have asthma
  - About 2 million emergency room visits and 500,000 hospital admissions annually
- Rising prevalence and death rate for asthma
- Most morbidity and mortality preventable

Why Measure Asthma Care? (Continued)

- The healthy people (HP) 2010 objectives were built on four identified components of effective asthma management:
  - Control of exposure to factors that trigger asthma episodes
  - Adequate management of asthma with pharmaceuticals
  - Monitoring the disease by using objective measures of lung function
  - Education of asthma patients to become partners in their own care

Why Measure Asthma Care? (Continued)

- National Committee for Quality Assurance (NCQA), which measures and compares managed health care plan performance, includes an asthma care measure in its Health Plan Employer Data and Information Set (HEDIS™)
  - In Calendar Year (CY) 1999, the average reporting plan showed 57.3 percent of members with persistent asthma received appropriate medications
  - HEDIS™ 90th percentile in CY1999 was 68 percent
    - DoD benchmark

Why Measure Asthma Care? (Continued)

- Asthma was one of the first conditions selected for the DoD/VA clinical practice guideline (CPG) effort
- Asthma was selected based on:
  - Prevalence in the VHA and DoD populations
  - Risks associated with this condition
  - Mitigating effects of early diagnosis and preventive treatment on the frequency and severity of asthma symptoms and mortality

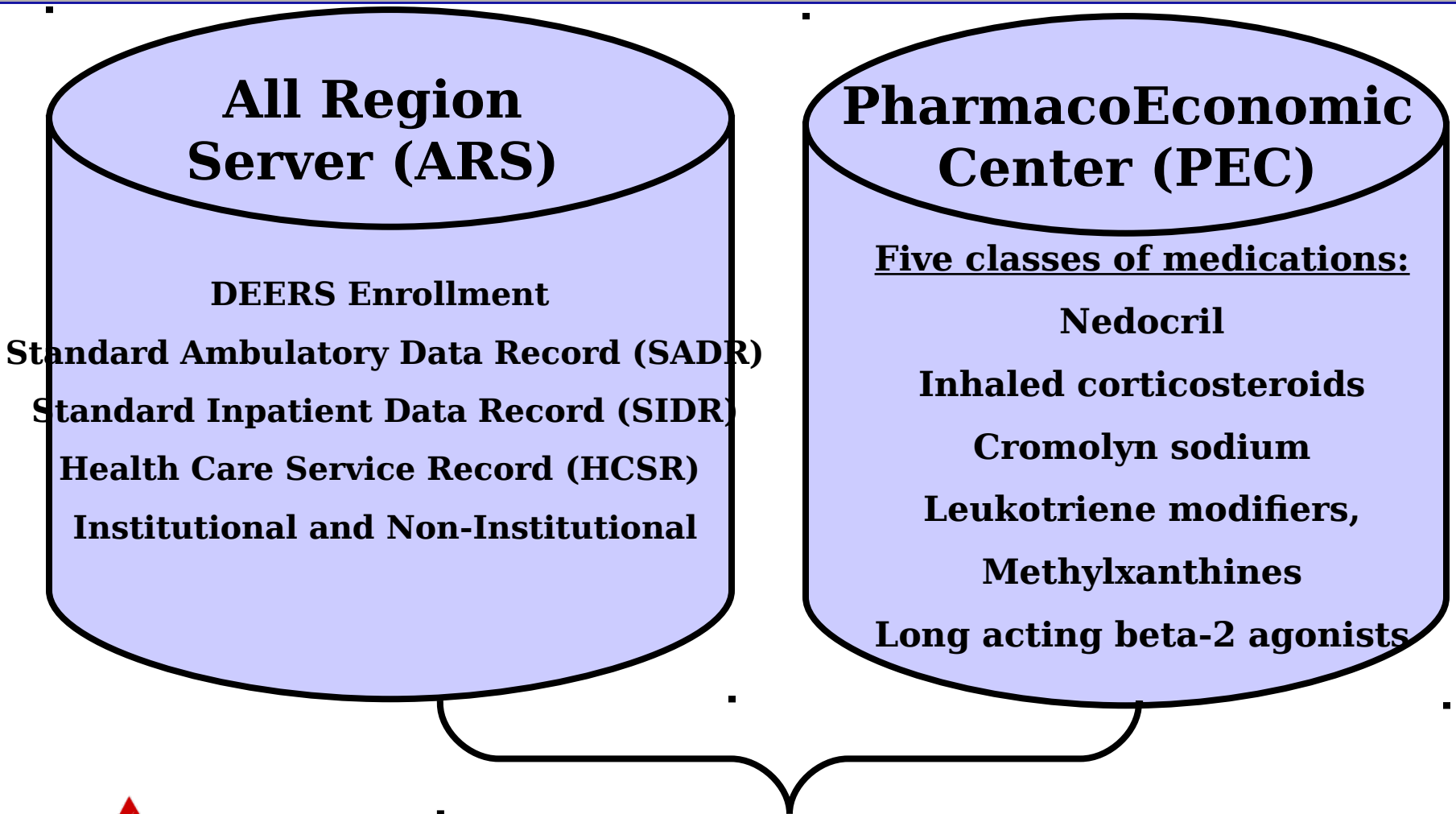
Asthma Study Questions

- What was the rate of appropriate medication prescriptions for the long-term control of persistent asthma in Medical Treatment Facility (MTF)-enrolled beneficiaries with persistent asthma?
  - What was the rate by organizational level?
  - What was the rate by age group and duty status?
- What was the inpatient admission and emergency department utilization by MTF-enrolled beneficiaries with persistent asthma?

Asthma Study Methodology

- A retrospective, descriptive approach was used to measure medication prescription rates for long-term control of patients with persistent asthma
  - Defined eligible cohort of MTF-enrolled persistent asthmatics
  - Queried pharmacy data to identify enrolled, persistent asthmatic beneficiaries with documented pharmacy transactions for any of five classes of medications typically prescribed for treatment of persistent asthma
  - Rates were measured by demographic characteristics, duty status, and organizational level
  - Study period : 1 April 2000 – 31 March 2001

Data Acquisition And Manipulation



Asthma Care in MHS Study

Asthma Study Findings Demographics_

Age	Number	%	Female	Male
5-9	10,194	27.5	3,740	6,454
10-17	7,759	20.93	3,089	4,670
18-56	19,110	51.56	13,460	5,650
TOTAL	**37,063**	**100**	**20,289**	**16,774**

Asthma Study Findings
Demographics (Continued)_

Duty Status	Number
Active cohort)	2,594 (7% of asthma
Navy	909
Army	1,259
Air Force	426
Non-Active cohort)	34,469 (93% of asthma

Asthma Study Findings

Utilization of Hospital and Emergency Services by Persistent Asthma Cohort by Direct and Network Care

Admissions	Inpatient Visits		Outpatient Visits		Emergency Room Visits	
	Number	Percentage	Number	Percentage	Number	Percentage
Direct Care	1,578	59.85	24,936	83.20	15,418	61.38
Purchased Care	1,059	40.15	5,036	16.80	9,698	38.62
Total	2,637	100.00	29,972	100.00	25,116	100.00

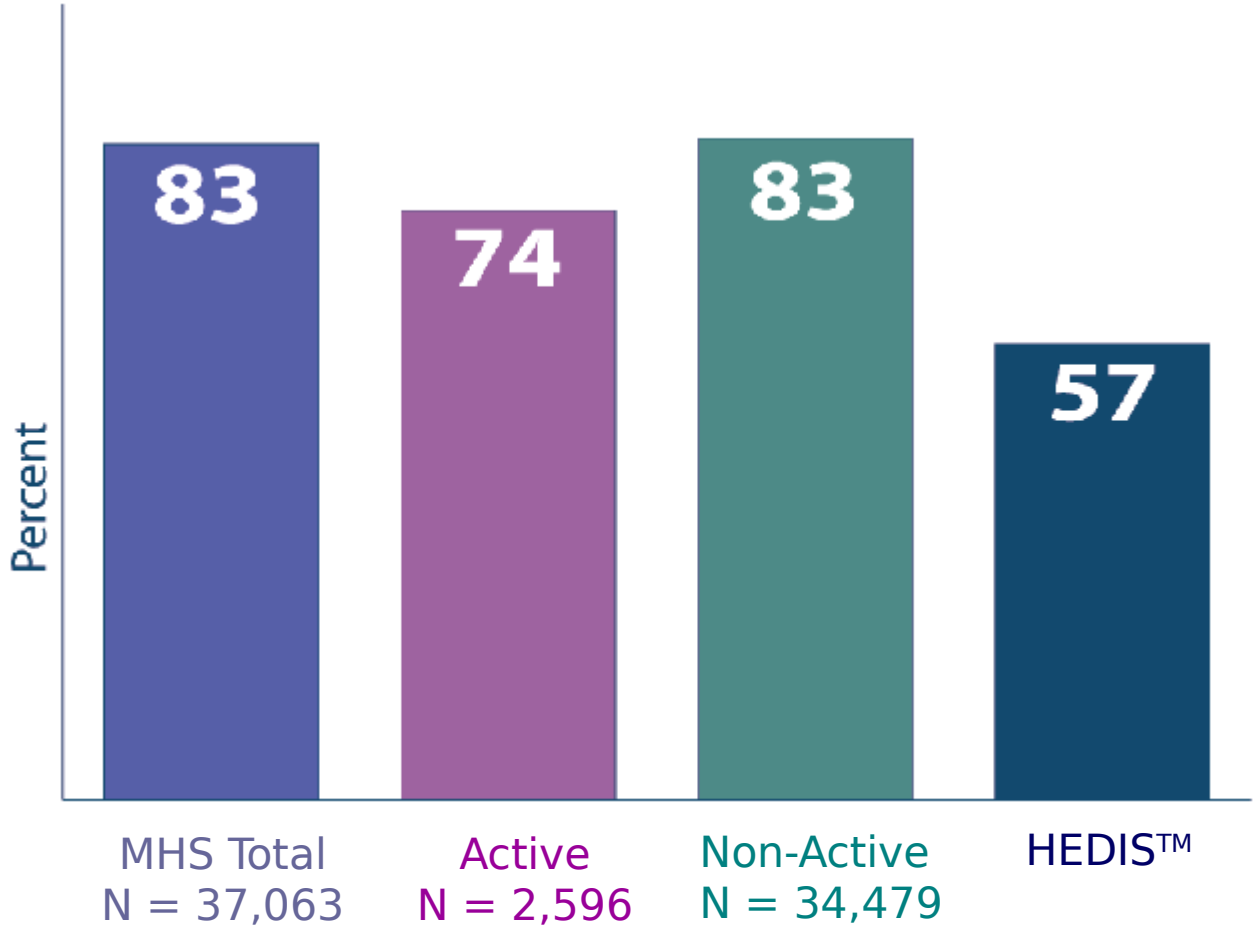
Asthma Study Findings (Continued)

Utilization of Hospital and Emergency Services by Persistent Asthma Cohort (N = 37,063)

	Emergency Department	Inpatient Services
One Admission or Visit	12,290	2,086
Two Admissions or Visits	3,657	173
Three or More Admissions or Visits	1,384	56

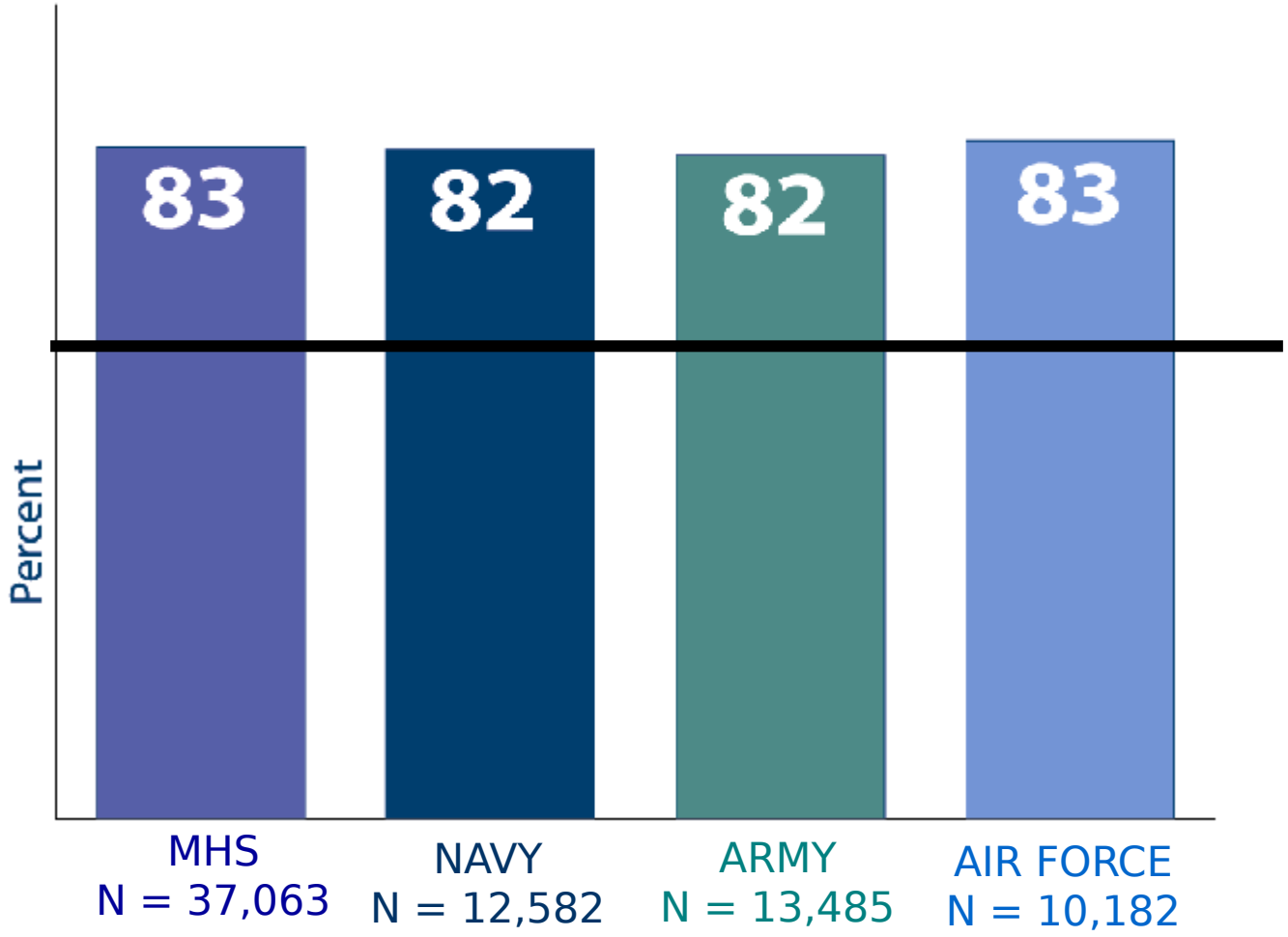
Asthma Study Findings (Continued)

A Comparison of the Rate of Appropriate Utilization of Asthma Medications Among MTF Enrollees and the Nation,



Asthma Study Findings (Continued)

Rate of Appropriate Prescription of Asthma Medications Among MTF Enrollees by Services, 2000-2001



HEDIS™ Average = 57

Discussion

- Substantial numbers of outpatient visits with asthma diagnoses were observed for patients who did not meet the HEDIS™ cohort definition
  - The total impact of asthma on the MHS is only partially accounted for in this report
  - About 40 percent of acute patient services, both inpatient and emergency, were provided to MTF enrollees outside the MTF, in the purchased care arena

Discussion (Continued)

- The methodology used in this study differed from HEDIS™ methodology
  - HEDIS™ uses “continuous” enrollment
  - HEDIS™ rates do not have a direct link between cohort membership and prescriptions because cohort membership is established the year before the measurement year
  - This study methodology probably resulted in higher prescription rates for some cohort members who were identified by a combination of visits and medications or by medication prescriptions alone

Discussion (Continued)

- The difference in prescription rates between Active Duty and Non-Active Duty was striking
  - Most striking in the Air Force where 71 percent of Active Duty asthmatics and 85 percent of Non-Active Duty had prescriptions
- The study results suggest that the asthma cohort is geographically concentrated
  - Over 50 percent of all enrolled beneficiaries with persistent asthma were enrolled in Regions 1, 2, 3, and 6, with the highest concentration in all age groups and by duty status in region 2

Conclusions

- MTF enrollees appear to compare favorably to commercial health plan counterparts in treatment of asthma with medications
- Active Duty population may be receiving appropriate therapy at a lower rate than the Non-Active Duty population
- The asthma cohort appears to be geographically concentrated on the East Coast of the U.S. and in Texas, Oklahoma, and Louisiana

Limitations

- Lack of comparability to HEDIS™ prescription rates already mentioned
- Lack of purchased care prescription data available for this study
- Race could not be analyzed due to insufficient data from the defense eligibility enrollment system (DEERS)

Recommendations

- The MHS should continue to monitor asthma medication prescription patterns
- Efforts should be made to further refine the study methods to improve the accuracy of the denominator and numerator data
- Investigate the questions raised by the apparent difference in treatment rates of Active Duty versus Non-Active Duty

Recommendations (Continued)

- Investigate the geographic distribution of the asthma patients and the percentage of enrollees with persistent asthma
- Include the purchased care pharmacy claims data for analysis
- Increase provider awareness regarding coding issues

Follow-on Asthma Care Study

- Appropriate medication prescriptions by persistent asthmatic population (repeat)
- Per capita rate of inpatient admissions with an asthma diagnosis (new)
- Per capita rate of emergency room visits with an asthma diagnosis, excluding inpatient admissions (new)

Follow-on Asthma Care Study (Continued)

- Per capita distribution of asthma patients (new)
- Per capita rate of ambulatory visits with an asthma diagnosis (new)
- Ratio of corticosteroid to bronchodilator prescriptions (new)
- Percentage of MTF asthma visits with severity code indicated (new)

Take Home Message

- We are doing very well overall in our care of persistent asthmatics, certainly better than the average managed care health plan measured in HEDIS™….but there is room for improvement
  - Improve the accuracy of our coding and use extender codes
  - Review the patients in your panels and ensure that all asthmatics are included in your disease management program

Questions

Diabetes Care In The MHS

Why Measure Diabetes Care?

- There are an estimated 16 million diabetics in the U.S. today
- Diabetes is responsible for significant morbidity and mortality, accounting for about 200,000 deaths a year
- Diabetes contributes to blindness, renal failure, coronary heart disease, and a variety of microcirculatory problems
- Despite morbidity and mortality that can be attributed to diabetes, the condition and its effects can be minimized with currently available monitoring techniques and treatment

Why Measure Diabetes Care? (Continued)

- The healthy people (HP) 2010 goal for diabetes is:

  "Through prevention programs, reduce the disease and economic burden of diabetes, and improve the quality of life for all persons who have or are at risk for diabetes."

  - There are 17 objectives listed to achieve this goal

- Diabetes Quality Improvement Project (DQIP) set standard measures for accountability and quality improvement

Why Measure Diabetes Care?
(Continued)

- National Committee for Quality Assurance (NCQA) HEDIS™ measures and compares managed health care plan performance including diabetes care measure
  - In Calendar Year (CY) 2000, in HEDIS™, 78% of diabetics had a HbA1c test in the past year, 48% had an eye exam, and 77% had a lipid profile on record
  - HEDIS™ 90th percentile benchmark is 87% for HbA1c in past year and 80% for a lipid profile

Why The MHS Chose To Measure Diabetes Care?

- One of the first conditions selected for the Department of Defense (DoD)/Veterans Administration (VA) clinical practice guideline (CPG) effort
- Diabetes was selected based on:
  - Prevalence in the Veterans Health Administration (VHA) and DoD populations
  - Costs associated with complications
  - Association with co-morbid conditions
  - Preventable morbidity and mortality

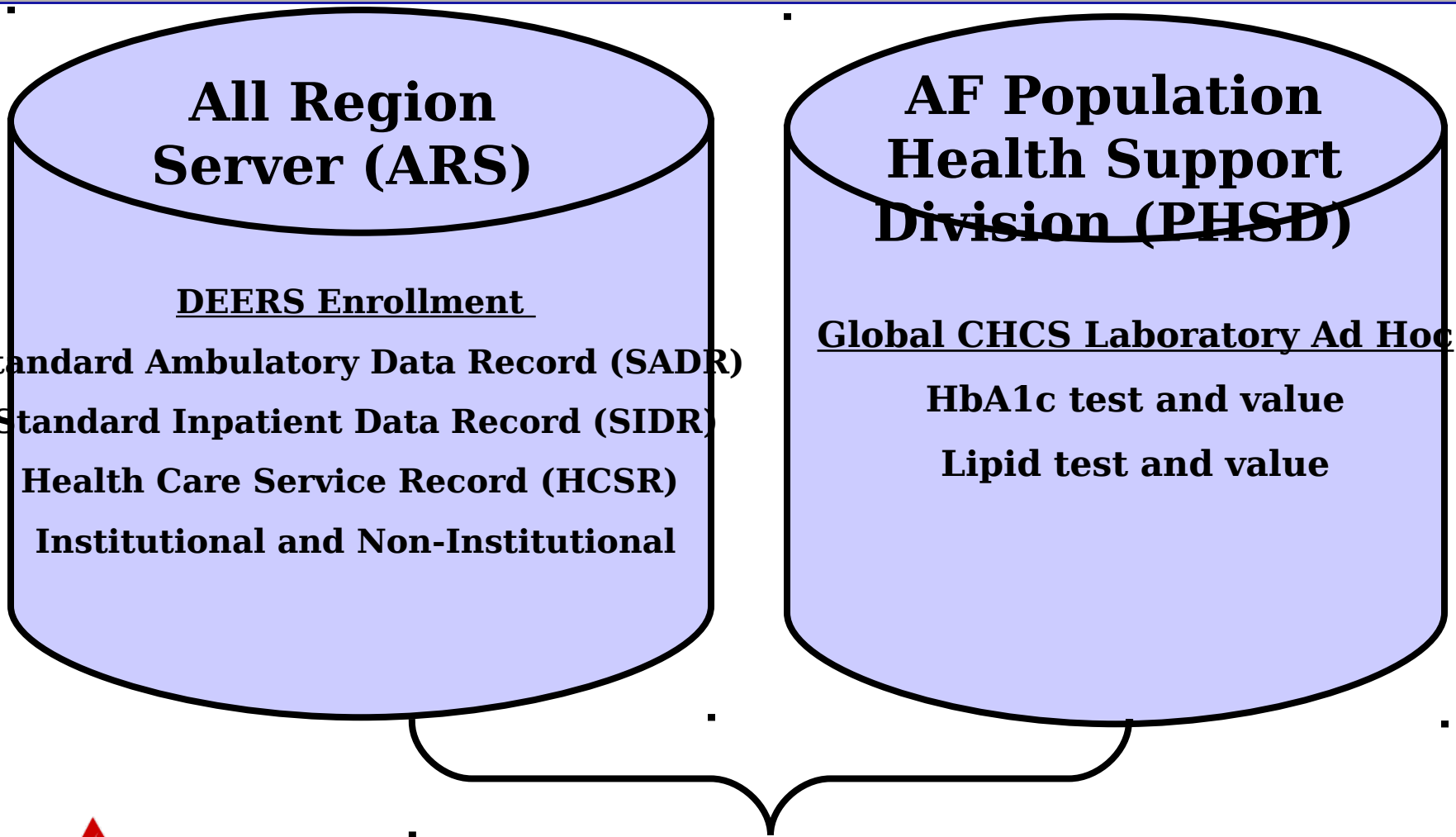
Diabetes Study Questions

- What is the distribution of beneficiaries with diabetes enrolled to MTFs?
- What is the level of compliance with the CPG and control of diabetes based on HbA1c and LDL-C testing for MTF-enrolled beneficiaries with diabetes?
- What is the level of compliance with the CPG for annual retinal eye exams for MTF-enrolled beneficiaries with diabetes?

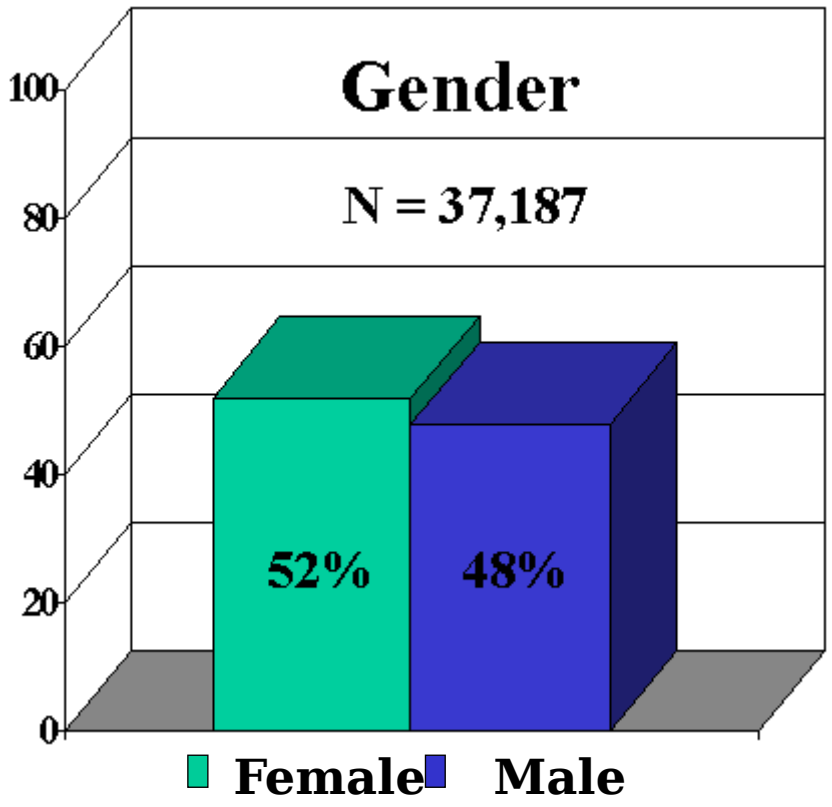
Diabetes Study Methodology

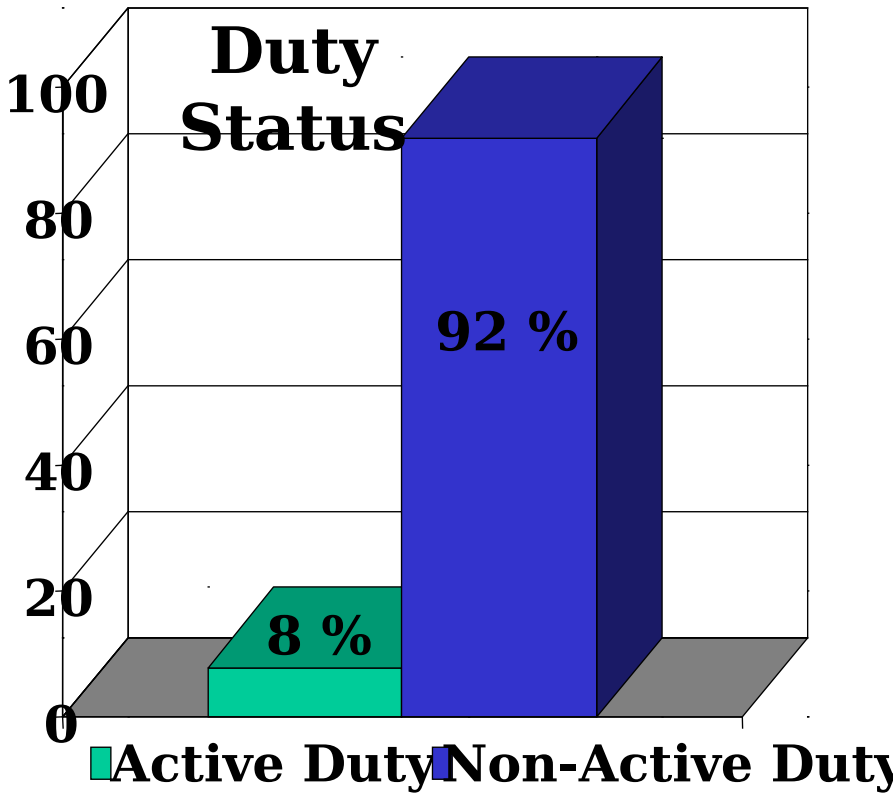
- A retrospective approach was used to estimate the rates of compliance and control for HbA1c, LDL-C, and retinal eye exams for MTF-enrolled diabetics within the MHS
  - An eligible cohort of beneficiaries enrolled to MTFs was defined and electronic medical records were queried to identify those beneficiaries who had received any of the screening or monitoring
  - Crude rates of HbA1c, LDL-C, and eye-exam compliance and control rates were calculated for several population subgroups within the MHS
  - Study period : 1 August 2000–31 July 2001

Data Acquisition And Manipulation

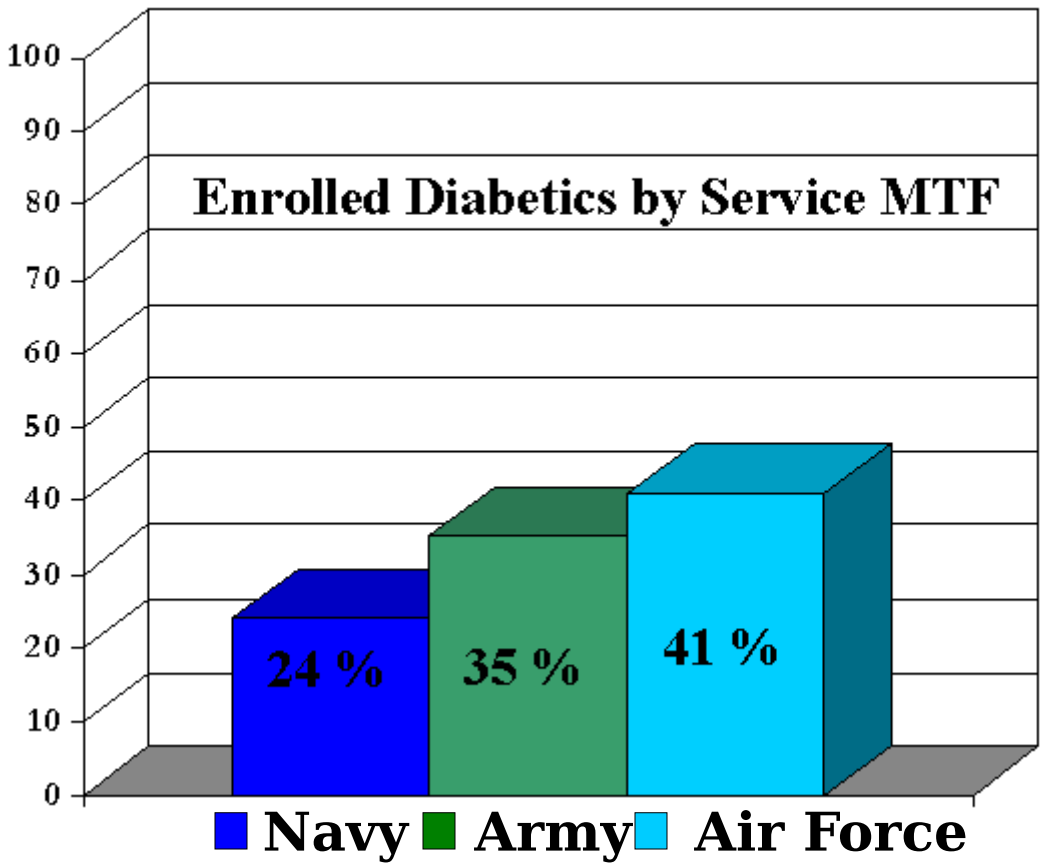

All Region Server (ARS)
DEERS Enrollment
Standard Ambulatory Data Record (SADR)
Standard Inpatient Data Record (SIDR)
Health Care Service Record (HCSR)
Institutional and Non-Institutional
AF Population Health Support Division (PHSD)
Global CHCS Laboratory Ad Hoc
HbA1c test and value
Lipid test and value
Diabetes Care in MHS Study

Diabetes Study Findings

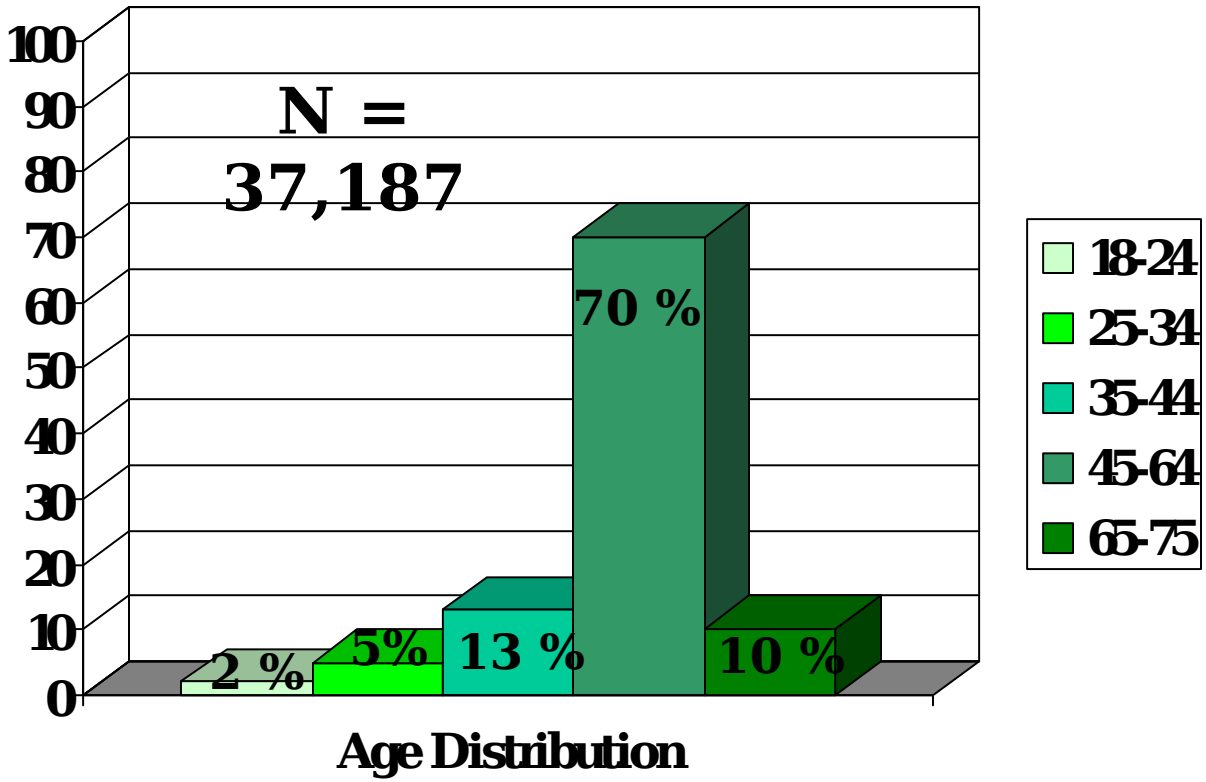




Diabetes Study Findings (Continued)



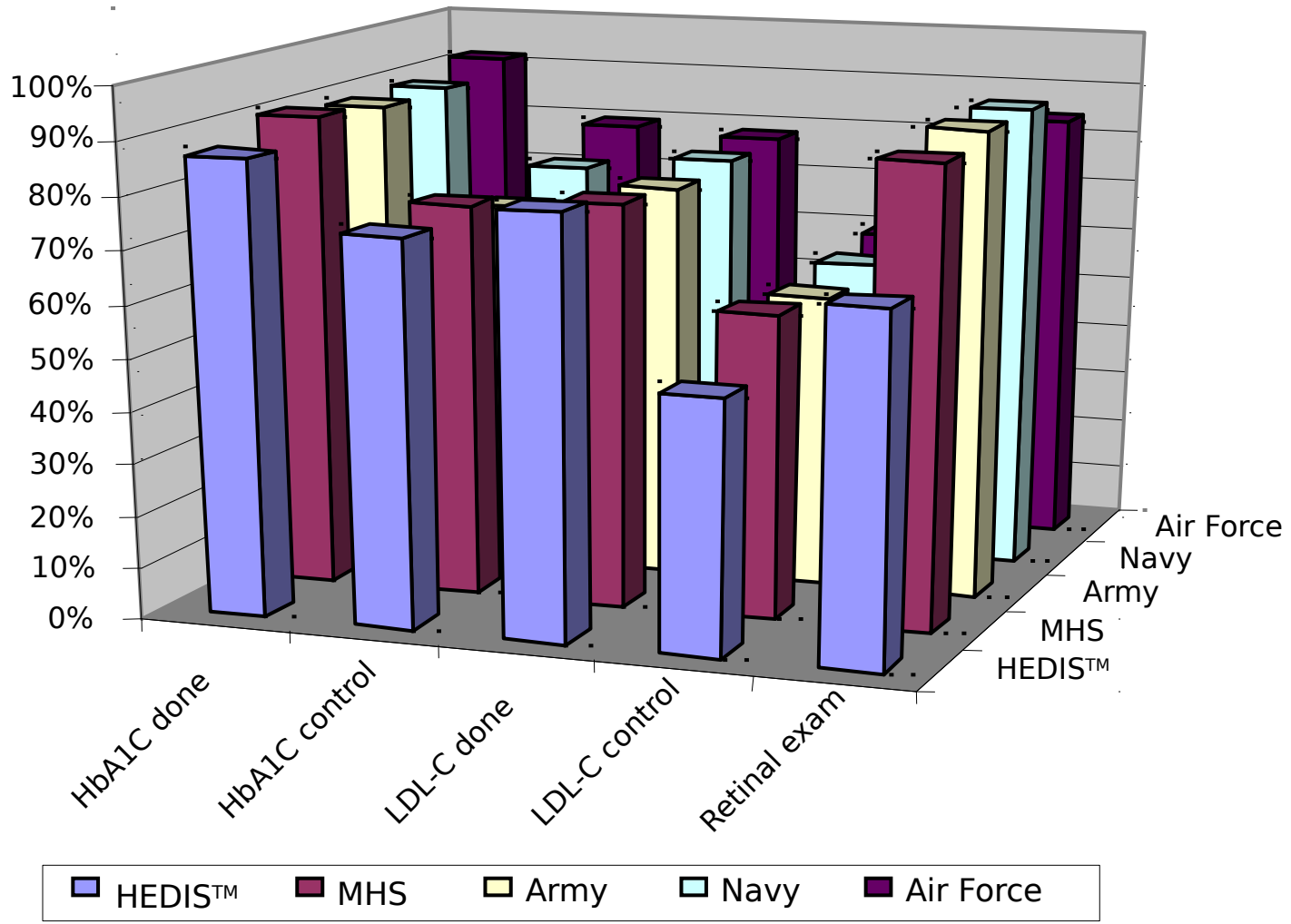
Diabetes Study Findings (Continued)



Diabetes Study Findings (Continued)

	MHS Average	Army	Navy	Air Force	HEDIS™ 90th Percentile	Healthy People 2010 Goal
HbA1c test	90.4%	88.9%	89.2%	92.0%	86.6%	50%
Glycemic control	75.3%	70.9%	74.5%	79.4%	73.9%	Not Listed
Lipid testing	77.2%	76.0%	77.6%	78.0%	80.0%	Develop-mental
Lipid control	58.3%	56.5%	58.2%	59.8%	48.5%	Develop-mental
Eye exams	87.7%	89.7%	90.1%	84.3%	66.4%	75%

MHS NQMP Diabetes Metrics

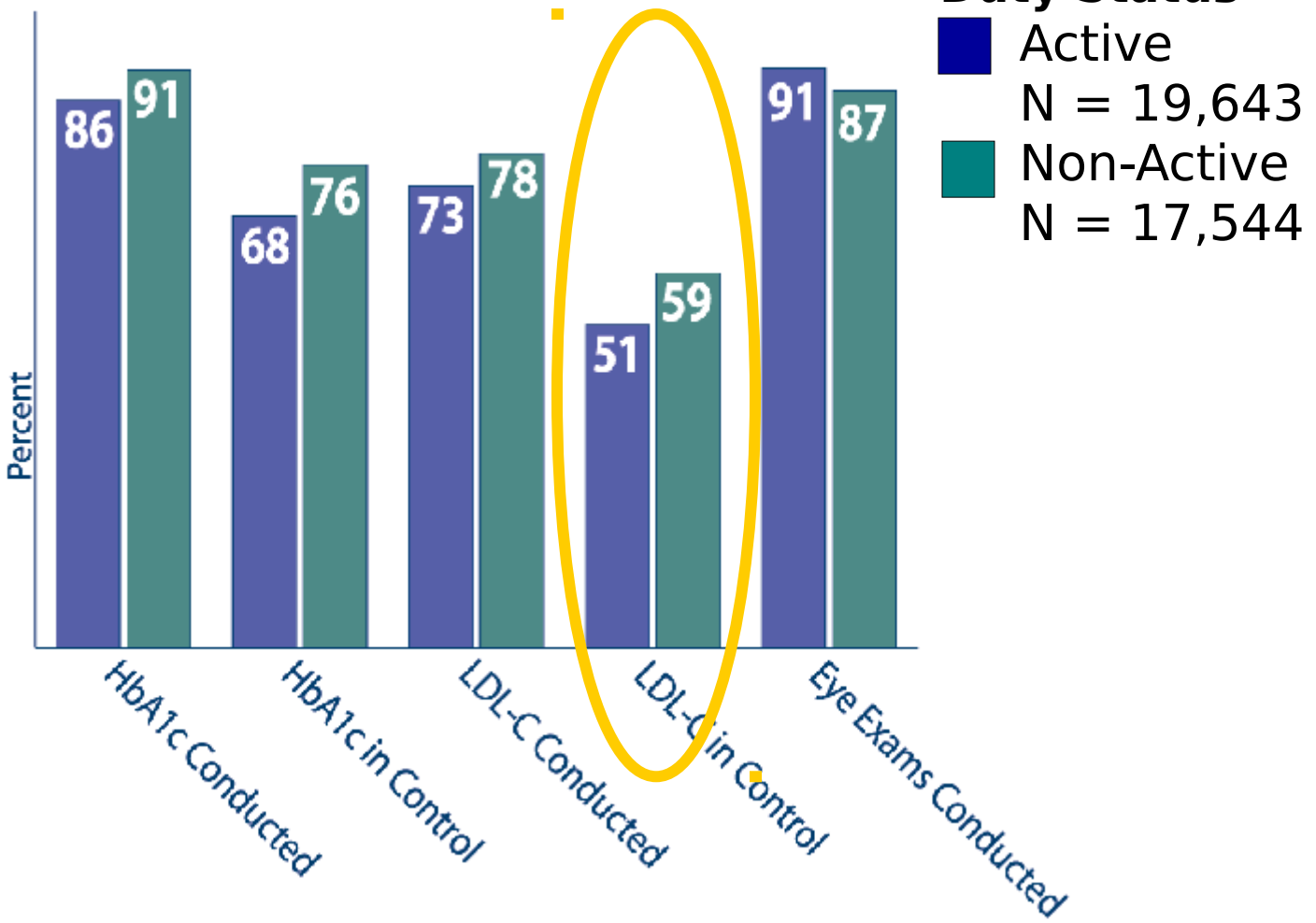


Diabetes Study Findings

MHS Diabetes Test Compliance and Control Among MTF Enrollees by Gender

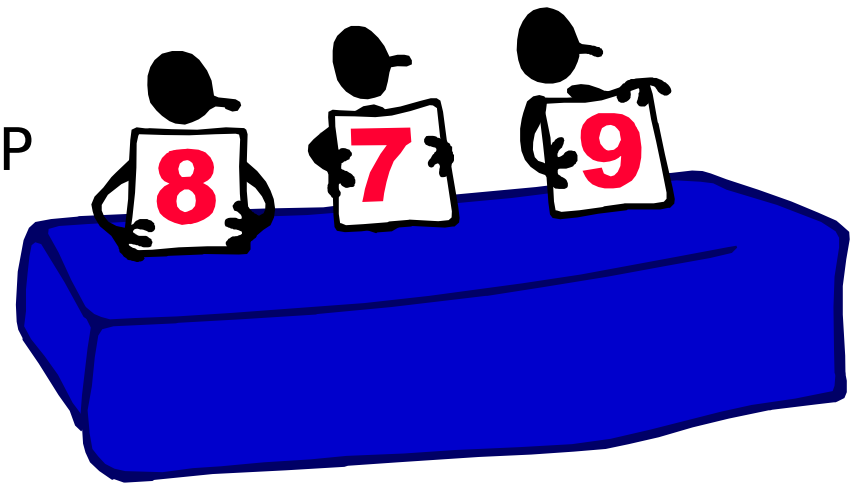
Diabetes Study Findings (Continued)

MHS Diabetes Test Compliance and Control Among MTF Enrollees by Duty Status



Conclusions

- The overall performance of the MHS is very good
- The MHS appears to exceed the HEDIS™ 90th percentile on all but LDL-C tests
- The MHS is within three percentage points of the HEDIS™ 90th percentile on the LDL-C tests
- On the two measures with HP 2010 goals, the MHS has exceeded those goals



Conclusions (Continued)

- The first study question addresses the distribution of diabetics among prime enrollees to the MTFs throughout the system
  - Higher concentrations of diabetics appear in Regions 3 and 6
  - The Air Force has the highest number of diabetics enrolled to its facilities, followed by the Army, and then the Navy

Conclusions (Continued)

- The first study question addresses the distribution of diabetics among prime enrollees to the MTFs throughout the system
  - The Navy's highest concentration of diabetics is in Health Services Office (HSO) San Diego
  - The Army's highest concentration of diabetics is in the Great Plains Regional Command
  - The Air Force's highest concentration of diabetics is in Air Education and Training Command (AETC)

Conclusions (Continued)

- The second study question addresses the levels of compliance and control of diabetes using HbA1c and LDL-C testing for MTF-enrolled diabetics
  - Compliance and control are uniform across region, service, and intermediate command with a few exceptions
  - Region 15, at 73 percent, is considerably below the HbA1c mean testing rate of 91 percent. Probably due to the small number of diabetics in the region
  - HbA1c “in control” percentages are lower than “test conducted” percentages across Regions and Services

Conclusions (Continued)

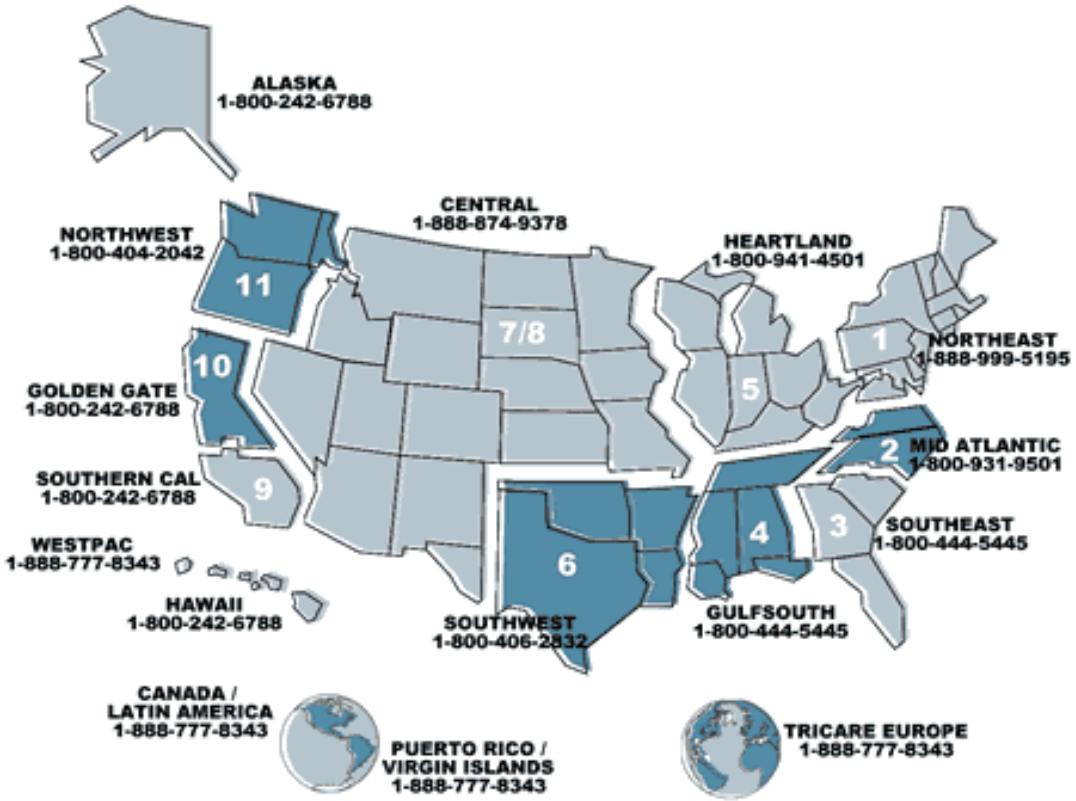
- The second study question addresses the levels of compliance and control of diabetes using HbA1c and LDL-C testing for MTF-enrolled diabetics (continued)
  - Percentage of LDL-C tests conducted by region is much lower than that for HbA1c
  - The services showed little variation in rates on HbA1c tests, LDL tests, and levels in control
  - The greatest variation in compliance and control occurred at the command levels of the individual services, with the Navy having the least variation

Conclusions (Continued)

- The level of compliance for annual retinal eye exams was the fifth measure examined. This measure is discussed separately because there is no control level involved
  - Using the HEDIS™ definition, the percentage of MTF-enrolled diabetics examined was fairly high, perhaps higher than expected, as the Air Force has reported lower rates for their enrolled diabetics
  - Variation across TRICARE regions was within five percentage points of the MHS average of 88 percent

Conclusions (Continued)

- Among the more interesting differences in the TRICARE regional data were the marked differences between Regions 7 and 8, in all measures



Conclusions (Continued)

- The following results for age and gender are noticeable:
  - Males tend to have higher rates of testing and better rates of control
  - This fact is particularly apparent for LDL-C testing and control for the older age groups
  - Differences appear across all other measures to a lesser extent

Strengths

- The use of comprehensive population data instead of a sample. This means that the data present results of the population, not an estimate
- Reasonable comparability to the HEDIS™ measures due to the use of HEDIS™ coding methodology
- Comprehensive numerator data

Limitations

- Methodological variations from HEDIS™ measure:
  - The current study did not use pharmacy data to ID diabetics, potentially decreasing the study cohort
  - HEDIS™ uses the previous and measurement year to identify diabetics. We used only the measurement year, potentially decreasing the study cohort
  - We included patients with a primary diagnosis of diabetes for an inpatient admission. HEDIS™ does not, potentially increasing the study cohort

Recommendations

- Further analyze and study gender and age differences in testing and control
- Educate providers to raise awareness of gender differences and narrow the gap, especially concerning LDL-C testing and control
- Study the distribution of the diabetic population in the system
- Investigate the apparent disparity in performance indicators between Regions 7 and 8

Recommendations (Continued)

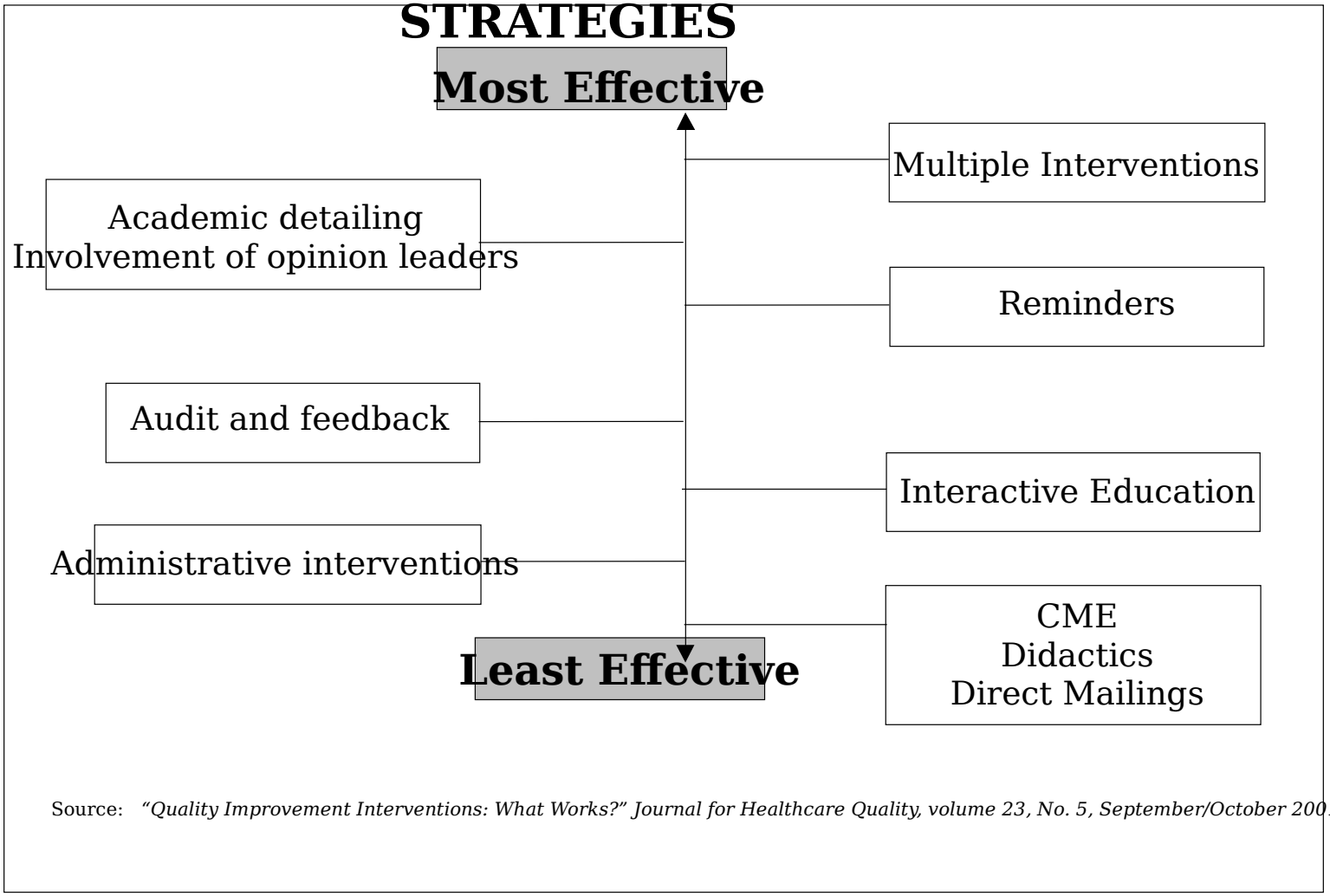
- Obtain pharmacy data to better define the population according to HEDIS™ methodology
- Define population by continuous enrollment to better define the population according to HEDIS™ methodology
- Compare MTF and network care enrollee populations to understand total care for the DoD population of diabetics
- Set goals for improvement over time of testing and control, especially for LDL-C

Follow-on Diabetes Care Study

- Add insulin prescriptions to help define diabetic population
- Add foot exam compliance rate
  - Military-unique CPT code awaiting approval
- Add microalbumin screening
- Measure LDL-C value at 120 in accordance with current guidelines

Communication

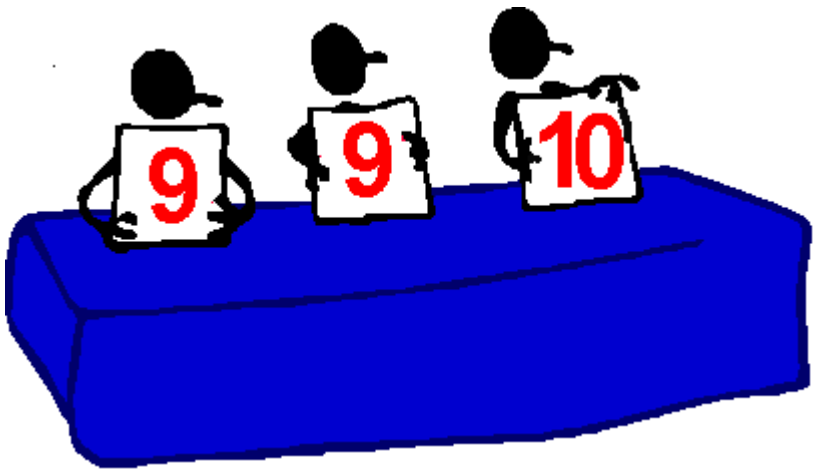
EFFECTIVENESS OF INTERVENTION STRATEGIES



Source: *"Quality Improvement Interventions: What Works?" Journal for Healthcare Quality, volume 23, No. 5, September/October 2001, p5.*

Take Home Message

- For the variables we can measure, we are doing a very good job overall managing our diabetic population… there is room for improvement
  - While HbA1c screening is very good, glycemia control can get better
  - LDL-C screening has a lot of room for improvement
  - Better coding of diabetic care will improve our ability to accurately measure



Where To Go For Additional Information

- The final report is available through your MTF performance improvement officer
- Study contact: specialstudies@acs-inc.com
- CPG information is available at:

  http://www.cs.amedd.army.mil/qmo